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(71) Applicant: SCA EMBALLAGE AB  
Box 504  
S-331 25 Vämamo (SE)

(72) Inventor: Hermansson, Owe  
Kottholmsvägen 6  
S-542 73 Mariestad (SE)  
Inventor: Nilsson, Börje  
Tunaholmsvägen 21  
S-542 43 Mariestad (SE)

(74) Representative: Mossmark, Anders et al  
Albijn West AB Box 142  
S-401 22 Göteborg (SE)

(54) Carton having an inclined plane.

(57) A carton formed of foldable paperboard or corresponding material, folded from a blank in which the four sides (10-13) of the carton are interconnected in sequence. The bottom of the carton is composed of at least two bottom flaps (19, 20) projecting from opposing sides. One of the sides (10) which is provided with a bottom flap comprises a lid (10b) nearby said flap, enabling discharge of goods loaded in the carton. The nearby bottom flap (19) is provided with an extension part (25) which can be folded down to form a distance element, the end edge of which abuts the inside of the other bottom flap (20).

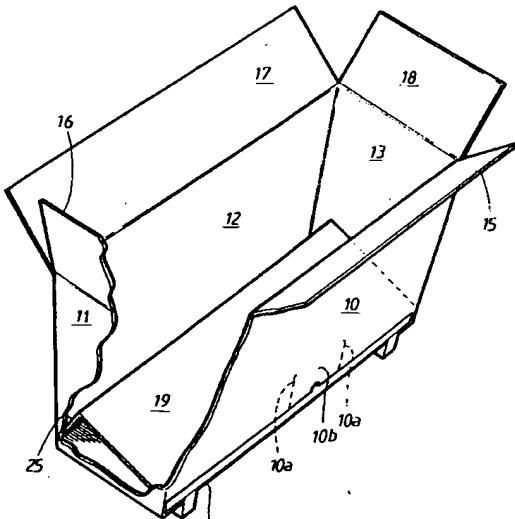


FIG.2

## FIELD OF THE INVENTION

The invention relates to a carton formed of foldable paperboard or corresponding material, folded from a blank in which the four sides the carton are interconnected in sequence, and in which the bottom of the carton is composed of at least two bottom flaps projecting from opposing sides.

## TECHNICAL BACKGROUND

It is common to use collapsible returnable plywood boxes for storing and transport of for example potatoes from producers to the market. The box is provided with a comparatively small openable lid in one of the sides, nearby the bottom of the box. A drawback with these return boxes is that they must be thoroughly cleaned between times of use, so that no parasites, mould or other hazardous pollution can be transmitted from one load of potatoes to another. Naturally, it is possible to use disposable carton boxes for this purpose. However, it has proven to be difficult to accomplish a carton box which can be opened and emptied via a lid nearby the bottom. It is inappropriate to open the carton via an upper lid, because potatoes should not be subjected to light.

For a returnable plywood box it is justified to provide the box with a comparably expensive lid device. However, a disposable box must be cheap and simple to produce. Also, the lid must be easy to open, without risking the lid opening at an inconvenient moment, i.e. in loaded condition during transport and handling.

## THE TECHNICAL PROBLEM

One object of the present invention is to provide a disposable carton box which can be formed from a one-piece blank and provides a solution for the above described problems.

## THE SOLUTION

According to the invention, one of the sides which is provided with a bottom flap comprises a lid nearby said flap, enabling discharge of goods loaded in the carton, and that the nearby bottom flap is provided with an extension part which can be folded down to form a distance element, the end edge of which abuts the inside of the other bottom flap.

Preferable embodiments of the invention are described in the accompanying subclaims.

## BRIEF DESCRIPTION OF THE DRAWINGS

One embodiment of the invention will now be described in more detail with reference to the accompanying drawing, in which

Fig. 1 is a plane view showing a carton blank,

Fig. 2 and 3 shows the mounted carton in perspective from two different directions.

## PREFERRED EMBODIMENTS OF THE INVENTION

The reference numbers 10, 11, 12 and 13 denotes the portions of the blank which form the side walls of the carton. One of said walls 10 is provided with a lid 10b which is formed by two perforations 10a which will be described in more detail below. The four side walls are interconnected in sequence, so that a flap 14 belonging to the side wall 10 can be fastened to the side wall 13 forming a tubular carton blank.

Each side wall at the upper end of this tubular carton blank is provided top flap 15, 16, 17 and 18 respectively which can be folded down conventionally and locked together for forming a tight closing, after erection of the carton and after the goods has been loaded into the carton.

Both the long sides 10 and 12 are provided with bottom flaps 19 and 20 respectively at the bottom end of the tubular carton blank, while the two short sides 11 and 13 are provided with a special type of bottom flaps 21 and 22 respectively. Both these flaps are previously known and adapted to cooperate via slit openings 21a, 22a and folding portions 21b, 22b with a pallet element 23, for elevating the carton above a surface allowing insertion of a fork lift.

The bottom flap 19 is provided with a slit 24 adjacent the lid 10b and an extension portion 25. The slit 24 is slightly longer than the size of the lid 10b. The bottom flap 20 is provided with a tongue 26 with broadening flap means 26a and a finger opening 26b. The total width of the lid 26 and the flap means 26a corresponds to the size of the slit 24.

All of the above mentioned side flaps, top flaps and bottom flaps are conventionally connected along fold lines 27 which facilitate the erection of the carton blank into a box.

Erection is performed in the following way: First the tubular carton blank is folded up from a flat position to an erected position, then the bottom flap 19 is folded into the box with the extension portion folded down, i.e. with free edge of the extension portion pointing towards the bottom opening of the box. Then the bottom flap 20 is folded up and the tongue 26 is inserted into the slit 24. Now the pallet element 23 can be mounted by means of the bottom flaps 21 and 22. Afterwards, goods can be loaded into the carton via the box top which then is closed and sealed in a suitable way. Now, the tongue 26 is located inside the lid 10b and strengthens this portion because the flap portions 26a extends outside the edge of the lid. Accordingly, there is no risk of the carton contents pressing the lid 10b open.

Discharge of the carton is performed in the following way:

First the seal 10a is broken by folding up the lid 10b. Then a finger is inserted into the hole 26b, by means of which the tongue 26 can be folded out through the lid opening by simultaneous folding back of the flaps 26b. The contents of the carton can now be discharged in a desired rate via the lid opening. If the contents of the carton is potatoes, it may be necessary to assist a little with the hand to push them through the opening. Then the lid 10b will spring back essentially preventing light from entering via the lid opening. Discharge of the carton is facilitated because the edge of the extension portion 25 abuts the inside of the bottom flap 20, so that the flap 19 itself forms an inclined plane at the bottom of the carton said plane being inclined in the direction of the lid opening.

Even if a specific embodiment of the invention is shown in the drawings, it is obvious that further alternatives and modifications are possible within the scope of the patent claims. Naturally, the carton can be shaped differently. For example, the pallet element 23 does not form a part of the. The carton can also be used for other goods than potatoes.

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4. A carton according to any of the preceding claims, characterized in that the bottom comprises two additional flaps (21, 22) cooperating with a pallet element (23) for elevating the carton above a surface.
5. A carton according to any of the preceding claims, characterized in that the carton material is paper-board.

### Claims

1. A carton formed of foldable paperboard or corresponding material, folded from a blank in which the four sides (10-13) of the carton are interconnected in sequence, and in which the bottom of the carton is composed of at least two bottom flaps (19, 20) projecting from opposing sides, characterized in that one of the sides (10) which is provided with a bottom flap comprises a lid (10b) nearby said flap, enabling discharge of goods loaded in the carton, and that the nearby bottom flap (19) is provided with an extension part (25) which can be folded down to form a distance element, the end edge of which abuts the inside of the other bottom flap (20).

2. A carton according to claim 1, characterized in that the bottom flap (19) nearest to the lid (10b), is provided with a slit (24) adjacent the lid, and that the other bottom flap (20) is provided with a tongue (26) which can be inserted through the slit at the inside of the lid, for strengthening the lid portion.

3. A carton according to claim 2, characterized in that the tongue (26) is provided with broadening flap means (26a) at each side of the opening (26), that said flap means are foldably connected to the tongue, and that the length of the slit (24) corresponds to the size of the tongue inclusive the flap means.

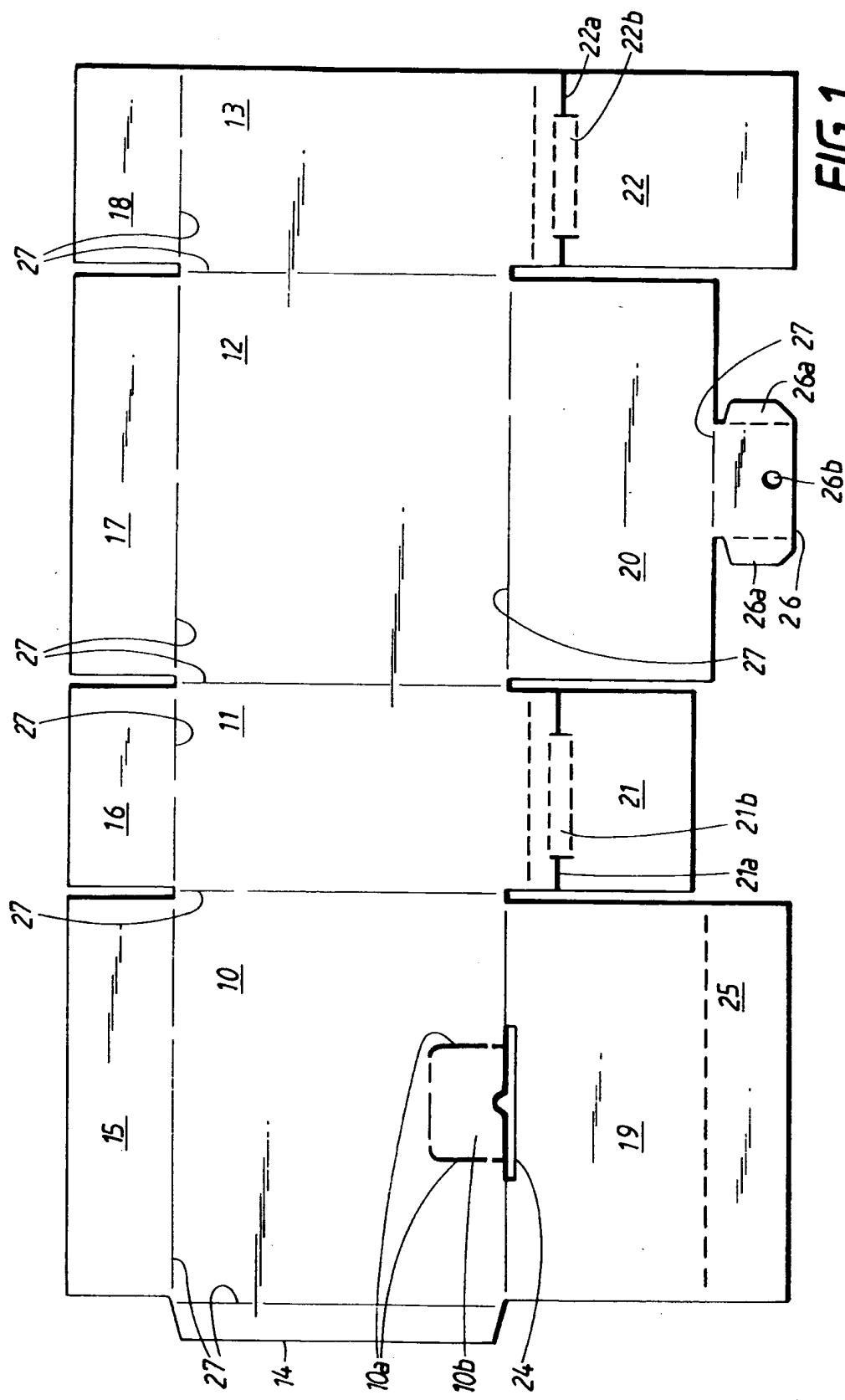


FIG. 1

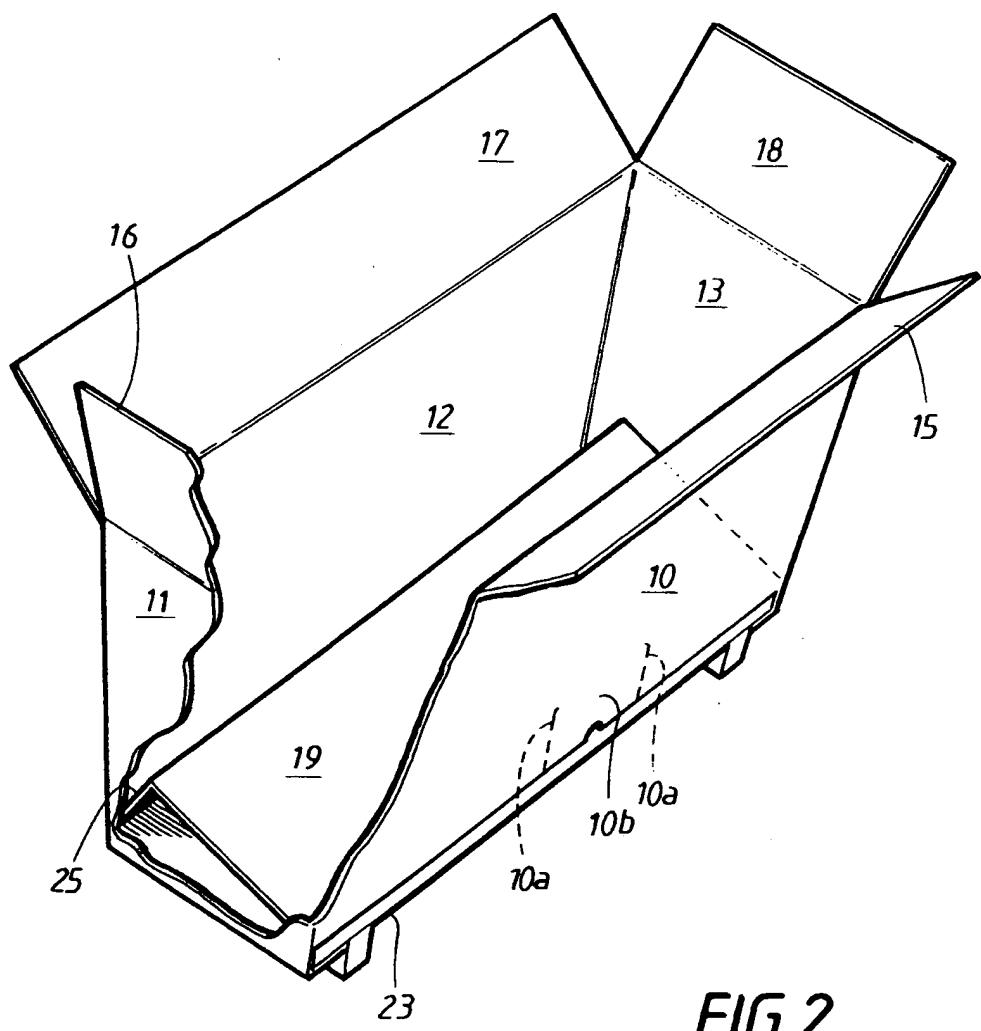
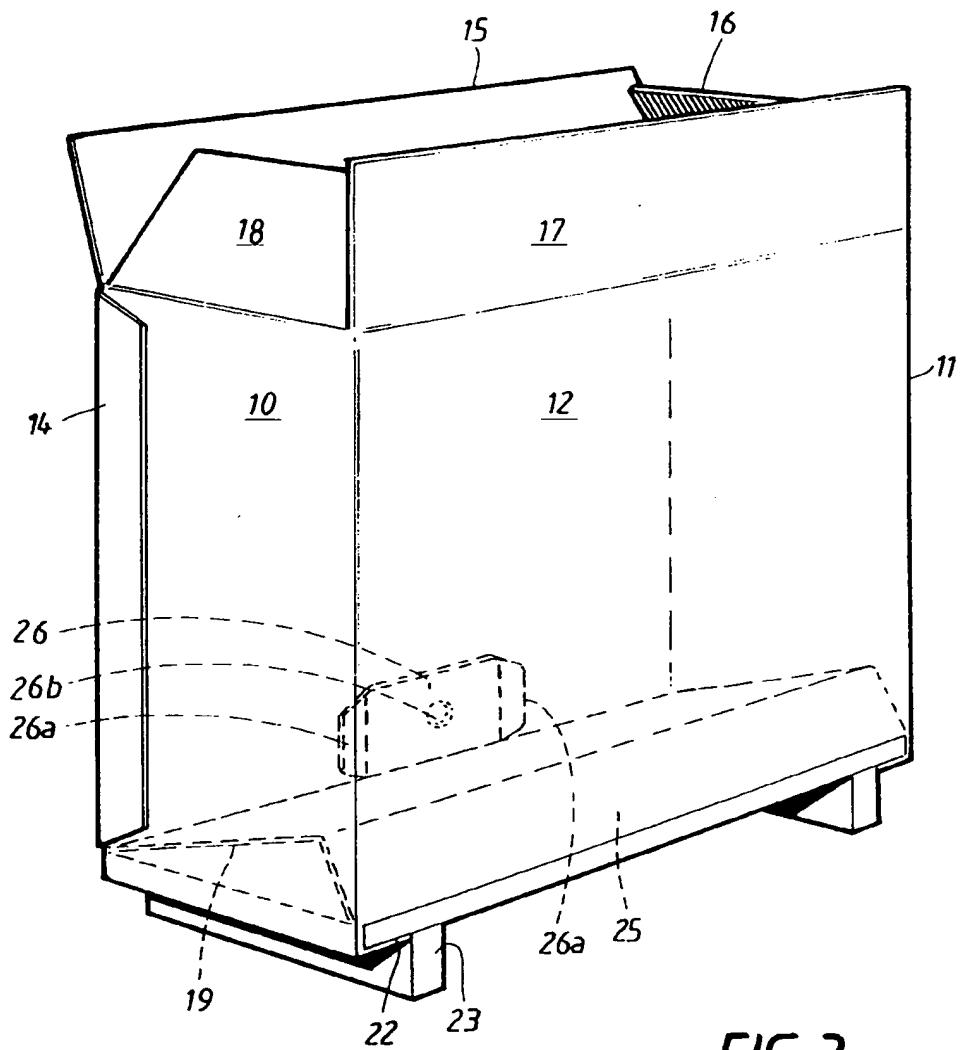


FIG.2





European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number

EP 91 85 0322

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claims	CLASSIFICATION OF THE APPLICATION (Int. CL.5)
A	US-A-4 039 118 (KAWOKA) * column 3, line 15 - column 3, line 32; figures 1-4 *	1,5	B65D5/72 B65D5/16
A	US-A-4 673 125 (WEAVER) * abstract; figures 1,2 *	1,5	
			TECHNICAL FIELDS SEARCHED (Int. CL.5)
			B65D
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	28 FEBRUARY 1992	LEONG, C. Y.	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : technological background O : non-written disclosure P : intermediate document & : member of the same patent family, corresponding document	
<small>EPO FORM 1500.01/82 (Rev.01)</small>			